

Rejection of Claims under 35 U.S.C. § 103

Claims 23-30 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takayama et al., U.S. Patent No. 5,624,380 (Takayama), in view of Maynard, U.S. Patent No. 5,405,337. Applicant respectfully traverses these rejections.

Takayama and Maynard, taken alone or in combination, neither teach or suggest a shape memory alloy catheter including:

. . . an addressable thin-film heater element in communication with the shape memory alloy portion for activation of selected micro-actuators,

as required by independent claim 23. The Examiner states that this limitation is taught by items **90** and **91** of Takayama. However, Takayama states at column 11, lines 55-65:

A pair of SMA control circuits (driving means) **90** for controlling the operations of actuators or thermally deformable members **11** each made of a two-directional shape memory alloy (SMA) coil are provided in each second bending flex piece **7b**, and a pair of SMA power source posts **91** are provided in each first bending flex piece **7a**. The pair of SMA control circuits **90** and the pair of SMA power source posts **91** are arranged at positions shifted from the mount positions of the pair of coupling pins **8a** by **90x** in the circumferential direction of the corresponding bending flex pieces **7b** and **7a**.

Thus, there is no teaching or suggestion that SMA control circuits **90**, and SMA power source posts **91** are an addressable thin-film heater element in communication with the shape memory alloy portion, as required by claim 23. In fact, it is clear from Takayama Column 12, lines 6-19) that these two components are not heater elements at all, but merely provide current to the deformable members **11**, which act as their own heaters:

One end of each thermally deformable member **11** is connected to the corresponding SMA power source post **91** provided to the corresponding first bending flex piece **7a**, and the other end thereof is connected to the corresponding SMA control circuit **90** of the corresponding second bending flex piece **7b** adjacent to this bending flex piece **7a**.

When all the thermally deformable members **11** maintain the first shape of the non-heating time, all the bending flex pieces **7a** and **7b** of the bendable flex portion **6** maintain the substantially linear reference shape. When any one of the thermally deformable members **11** is powered and heated, this heated thermally deformable member **11** is deformed to have the second shape of the heating time and contracted.

Accordingly, the Applicant respectfully submits that independent claim 23 is allowable over Takayama and Maynard, taken alone or in combination.

Claims 24-30, 32, 74, and 75 depend from claim 23, and are allowable for at least this reason.

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is requested to telephone the undersigned.

EXPRESS MAIL LABEL NO:
EL514815826US

Respectfully submitted,



Marc R. Ascolese
Attorney for Applicant(s)
Reg. No. 42,268